



December 27, 2012

Mr. Greg Gilmore  
Georgia Department of Natural Resources  
Response and Remediation Program  
2 Martin Luther King, Jr. Drive  
S.E. Suite 1462, East Tower  
Atlanta, Georgia 30334-9000

RE: Voluntary Remediation Program Semi-Annual Progress Report #1

Tara Shopping Center  
8564 Tara Boulevard, Jonesboro, Clayton County, Georgia  
Tax Parcel ID 13242D B001; HSI Site No. 10798

Dear Mr. Gilmore,

On behalf of Ashland Inc. (Ashland), EHS Support Inc. (EHS Support) is submitting the first Voluntary Remediation Program (VRP) Semi-Annual Progress Report (progress report) for the site referenced above. This progress report provides a summary of remediation activities completed following the acceptance of the Voluntary Investigation and Remediation Plan and Application (VIRP) dated January 2012. Pursuant to the Georgia Environmental Protection Division (EPD) Response and Remediation Program comment and acceptance letters issued on June 28, 2012, the progress report discusses the status of the following:

- Soil Analytical Data
- Monitoring Well Installation
- Qualifying Properties Status
- Exposure Assessment/Uniform Environmental Covenant
- White Paper Review
- Revised Cost Estimate and Financial Assurance Instrument

In addition, the progress report provides the following:

- A revised site plan identifying the qualifying property boundary and tax parcel information for all properties abutting the Tara Shopping Center, including properties east of Fayetteville Road.
- A revised site plan depicting all known historical boring locations completed under the Hazardous Site program.
- An updated table summarizing all the soil borings completed under the Hazardous Site program.
- An itemization of the professional engineer's and geologist's time invoiced to date with a description of services.

A summary of activities completed between July 1, 2012 and December 21, 2012 is provided below.

#### Source Area Remediation

In June 2012, Ashland selected In-situ Solidification Stabilization (ISS) as the preferred technology for source remediation at the Site. WRSCoast in Stone Mountain, Georgia is the preferred contractor to implement this technology. WRSCoast has successfully implemented the ISS technology throughout the state of Georgia and the southeast region of the United States. Excerpts from WRSCoast's cost proposal containing ISS case studies are provided in **Attachment A**.

In order to evaluate the effectiveness of this technology, a treatability study was conducted in the Spring of 2012 and additional geotechnical data was collected during October and November 2012. Based on the findings, WRSCompass has agreed to Ashland's request for a Performance Guarantee associated with the ISS implementation.

As proposed in the VIRP, source remediation will include partial demolition of the building structure, including the former dry cleaner unit. An asbestos survey was completed during October 2012 and identified limited asbestos containing material (ACM). This material will be removed and properly disposed of under the contract for services between Ashland and WRSCompass.

On December 17, 2012, WRSCompass submitted its final revised cost estimate to implement ISS source area remediation. The request for revised cost was necessary and included additional cost associated with asbestos abatement, utility abandonment, and building restoration. Ashland is currently reviewing the additional costs and anticipates finalizing the contract with WRSCompass in January 2013. A summary of the professional engineer's time is provided in **Attachment B**.

#### Summary of Soil Analytical Data

A revised site plan identifying the qualifying property boundary and tax parcel information for all properties abutting the Tara Shopping Center, including properties east of Fayetteville Road is provided as **Figure 1**. A site plan identifying the location of all historical soil borings completed under the Hazardous Site program is provided as **Figure 2**.

The Georgia EPD requested a revised soil analytical summary table including all known analytical soil data for the Site. Ashland contacted representatives of Tara Retail Holdings, LLC (Tara Retail) to request available environmental records associated with the Tara Shopping Center and activities completed by Tara Retail and its consultants. Unfortunately, Tara Retail was not able to provide Ashland with all the historical records to complete this task. A Georgia Open Records Act (GORA) request was submitted to Georgia EPD. The file review was conducted on December 14, 2012. Ashland is currently reviewing and tabulating data obtained from Tara Retail and the Georgia EPD. **Table 1** identifies all the soil borings completed at the Site and adjacent properties in association with the Hazardous Site program between 2004 and 2009 and the availability of analytical reports. An updated analytical summary table with analytical results will be provided under a separate cover.

#### Monitoring Well Installation

Ashland has successfully negotiated property access with Al Karim property (owner of the former Dunkin Donuts south of the Site), KOB Investments (owner of the Flint River Shopping Center west of the Site), and the owner of the What-A-Day Adult Day Care southeast of the Site (Refer to Figure 1). The following monitoring wells were installed off-site in late November/early December 2012:

- **MW-18 A/B:** Per the request of Georgia EPD, two monitoring wells were installed at the Al-Karim Property (former Dunkin Donuts) installed south of existing monitoring well cluster MW-9A/B/C.
- **MW-19A/B/C and MW-20:** Per the Pilot Test Effectiveness Report and Groundwater Corrective Action Investigation Workplan, dated July 8, 2011, monitoring wells were installed west of Tara Boulevard within the Flint River Shopping Center for the purposes of delineating groundwater impacts west and southwest of the Site. Well cluster MW-19A/B/C is centrally located in the parking lot of the Flint River Shopping Center. MW-20 is located in close

proximity and south of the unnamed creek. Bedrock was encountered at grade adjacent to the creek; therefore, only one monitoring well was installed (MW-20C).

A site plan identifying the location of the new, proposed and existing monitoring wells, as well as historical grab groundwater sampling locations is provided as **Figure 3**. The soil boring logs and well construction logs for newly installed monitoring wells will be provided under a separate cover. A summary of the professional geologist's time is provided in **Attachment B**.

Ashland continues to diligently work with the owner of the West Indies Shopping Center to install monitoring wells due west of the Site. As you are aware, Georgia EPD has assisted with this effort by sending additional correspondence to the attorney of the West Indies property. As of late, Ashland has been informed by the new attorney for the West Indies property that the property may be sold. The new attorney has asked Ashland to follow-up by the end of year to determine if access will be initiated with West Indies or the potential new property owner. On December 20, 2012, a representative from King and Spalding attempted to contact the attorney. A response is pending.

Finally, Ashland is seeking access to the undeveloped property to the east of the Site and Fayetteville Road for the purposes of installing monitoring wells east of the monitoring well cluster MW-2A/B/C. A letter has been sent to the owner on record. A response is pending.

A comprehensive groundwater sampling event is proposed prior to initiating remediation activities. It is anticipated groundwater sampling will be completed during the first quarter of 2013. Following this event, Ashland will evaluate Georgia EPD's recommendation to install a monitoring well north of MW-14A. In addition, Ashland will prepare and submit isoconcentrations maps for each identified contaminant of concern. Isoconcentration maps will be provided in the forthcoming progress report due June 28, 2013.

#### Qualifying Properties Status

At the present time, Ashland is unable to make a determination to incorporate additional off-site properties as qualifying properties under the VRP program. Pursuant to the June 28, 2012 VIRP acceptance letter, this progress report provides notification to EPD that the following affected properties are not currently included as a qualifying property under the VRP program but will be further evaluated following completion of groundwater delineation:

- L6-Clay Property (USA Payday), 8596 Tara Blvd
- Al Karim Property (former Dunkin Donuts), 8650 Tara Blvd
- Lumsden Properties LLC (Prax Air), 8660 Tara Blvd
- Sonu Enterprises Inc. (Citgo Gas Station), 8664 Tara Blvd

A map identifying the tax parcel information and qualifying property boundary is provided as **Figure 1**.

#### Exposure Assessment/Uniform Environmental Covenant

The Georgia EPD asked Ashland to complete an exposure assessment consistent with the United States Environmental Protection Agency's Guidance for Exposure Assessment dated May 29, 1992. At the present time, Ashland proposes to complete the exposure assessment following source area remediation which is proposed to commence in the first quarter of 2013.

Ashland has prepared a Uniform Environmental Covenant for the Tara Shopping Center property. This document encompasses institutional and engineering controls within the limits of known impact at the

Site. Upon finalization and concurrence with the property owner, the Uniform Environmental Covenant will be recorded with the Clayton County Clerk's office and a copy will be submitted to Georgia EPD.

#### White Paper Review

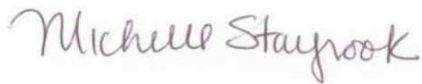
Ashland is awaiting comment from the Georgia EPD Watershed Protection Branch regarding the white paper (*Evaluation of the Applicability of PCE WQS and a Proposed Alternative Approach*) submitted by EHS Support in June 2012. The white paper discusses alternate surface water quality standards for the unnamed stream to the west of the Site. Per the conference call with Georgia EPD on December 20, 2012, the white paper is under review.

#### Revised Cost Estimate and Financial Assurance Instrument

As noted above, on December 17, 2012, WRSCoast submitted its final revised cost estimate to implement ISS source area remediation. The request for revised cost was necessary and included additional cost associated with asbestos abatement, utility abandonment, and building restoration. Ashland is currently reviewing the additional costs and requests a 60-day extension to submit the revised cost estimate and Financial Assurance Instrument. Per the conference call with Georgia EPD on December 20, 2012, the new submittal date is February 28, 2012.

If you should have any questions regarding the information presented in this progress report, please contact me at [michelle.stayrook@ehs-support.com](mailto:michelle.stayrook@ehs-support.com) or 412-807-1494. Alternatively you can contact Michael Dever at [mbdever@ashland.com](mailto:mbdever@ashland.com) or 614-790-1586.

Sincerely,



Michelle Stayrook  
EHS Support, Inc  
Project Manager

#### Attachments

cc: Michael Dever, Ashland (email)  
Rich Williams, Esq. Ashland (email)  
Kristin VanLandingham, EHS Support (email)

**TABLE 1**  
**Tabulated Summary of Historical Soil Boring Locations**  
**Tara Shopping Center, Jonesboro, GA**  
**Voluntary Remediation Program (HSI 10798)**

*Environmental Planning Specialists and URS Corporation*

Sample ID	Date Collected	Lab Report Available	Site	Soil	Groundwater (Alt. ID)	Report
SB-1 (3-4)*	9-Jun-05	Yes	Tara Shopping Center	X	-	EPS, 2005
SB-2 (1-2)*	9-Jun-05	Yes		X	-	
TMW-1 (0-4)*	9-Jun-05	Yes		X	-	
SB-4	2-Sep-05	Yes	South of Gas Station	-	SB-4	EPS, 2006
SB-1	Mar-06	Yes	Tara Shopping Center	X	B-1	URS, 2006
SB-2	Mar-06	Yes		X	B-2	
SB-3	Mar-06	Yes		X	B-3	
SB-4	Mar-06	Yes		X	B-4	
SB-5	Mar-06	Yes		X	B-5	
SB-6	Mar-06	Yes		X	B-6	
SB-7	Mar-06	Yes		X	B-7	
SB-8	Mar-06	Yes		X	B-8	
SB-9	Mar-06	Yes		X	B-9	
SB-10	Mar-06	Yes		X	B-10	
SB-11	Mar-06	Yes		X	B-11	
SB-12	Mar-06	Yes		X	B-12	
SB-13	Mar-06	Yes		X	B-13	
SB-14	Mar-06	Yes	Prax Air	X	B-14	
SB-15	Mar-06	Yes		X	B-15	
SB-16	Mar-06	Yes		X	B-16	
SB-17	Mar-06	Yes		X	B-17	
SB-18	Mar-06	Yes	Citgo Gas Station	X	B-18	
SB-19	Mar-06	Yes	Tara Shopping Center	X	B-19	
SB-20	Mar-06	Yes		X	B-20	
SB-21	Mar-06	Yes		X	B-21	
SB-22	Mar-06	Yes		X	B-22	
MW-13B (15-17)	Feb-08	Yes	Prax Air	X	-	URS, 2009
MW-13B (20-22)	Feb-08	Yes		X	-	
SB-23	Sep-08	na	Tara Blvd Right of Way (ROW) West	-	DRY	
SB-24	Sep-08	na		-	DRY	
SB-25	Sep-08	na		-	DRY	
SB-26	Sep-08	Yes		-	SB-26	
SB-27	Sep-08	Yes		-	SB-27	
SB-28	Sep-08	Yes		-	SB-28	
SB-29	Sep-08	Yes		-	SB-29	
SB-30	Sep-08	Yes		-	SB-30	
SB-31	Sep-08	Yes		-	SB-31	
SB-32	Sep-08	Yes		-	SB-32	
SB-33	Dec-08	Yes	Tara Shopping Center	X	SB-34	URS, 2009
SB-34	Dec-08	Yes		X	SB-35	
SB-35	Dec-08	Yes		X	SB-36	
SB-36	Dec-08	Yes		X	SB-36	
SB-37	Dec-08	Yes		X	B-37	
SB-38	Dec-08	Yes		X	SB-38	

**TABLE 1**  
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**Tara Shopping Center, Jonesboro, GA**  
**Voluntary Remediation Program (HSI 10798)**

*Peachtree Environmental Consultants*

Tara Boring ID	Date Collected	Lab Report Available	Site	Soil	Groundwater	Report
P-1	NONE	No	Tara Shopping Center	-	-	na
P-2	Oct-07	No		X	-	Peachtree, 2007
P-3	Oct-07	No		X	-	
P-4	Oct-07	No		X	-	
P-5	Oct-07	No		X	-	
P-6	Oct-07	No		X	-	
P-7	Oct-07	No		X	-	
P-8	NONE	No		X	-	
P-9	Oct-07	No		X	-	
P-10	Oct-07	No		X	-	
P-11	Oct-07	No		X	-	
P-12	Oct-07	No		X	-	
P-13	Oct-07	No		X	-	
P-14	Oct-07	No		X	-	
P-15	Oct-07	Yes		X	-	
P-16	Oct-07	Yes		X	-	
P-17	Oct-07	Yes		X	-	
P-18	Oct-07	Yes		X	-	
P-19	Oct-07	Yes		X	-	
P-20	Oct-07	Yes		X	-	
P-21	Nov-07	Yes		X	-	
P-22	Nov-07	Yes		X	-	
P-23	Nov-07	Yes		X	-	
P-24	Nov-07	Yes		X	-	
P-25	Nov-07	No		X	-	na
P-26	Nov-07	No		X	-	
P-27	Nov-07	No		X	-	
P-28	Nov-07	No		X	-	
P-29	Nov-07	No		X	-	
P-30	Nov-07	No		X	-	
P-31	Nov-07	No		X	-	
P-32	Nov-07	No		X	-	
P-33	Nov-07	No		X	-	
P-34	Dec-07	Yes		X	-	
P-35	Dec-07	Yes		X	-	
P-36	Dec-07	Yes		X	-	
P-37	Dec-07	Yes		X	-	
P-38	Dec-07	Yes		X	-	
P-39	Dec-07	Yes		X	-	
P-40	Dec-07	Yes		X	-	
P-41	Dec-07	Yes		X	-	
P-42	Dec-07	Yes		X	-	
P-43	Dec-07	Yes		X	-	
P-44	na	No		X	-	

**TABLE 1**  
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**Tara Shopping Center, Jonesboro, GA**  
**Voluntary Remediation Program (HSI 10798)**

*Peachtree Environmental Consultants*

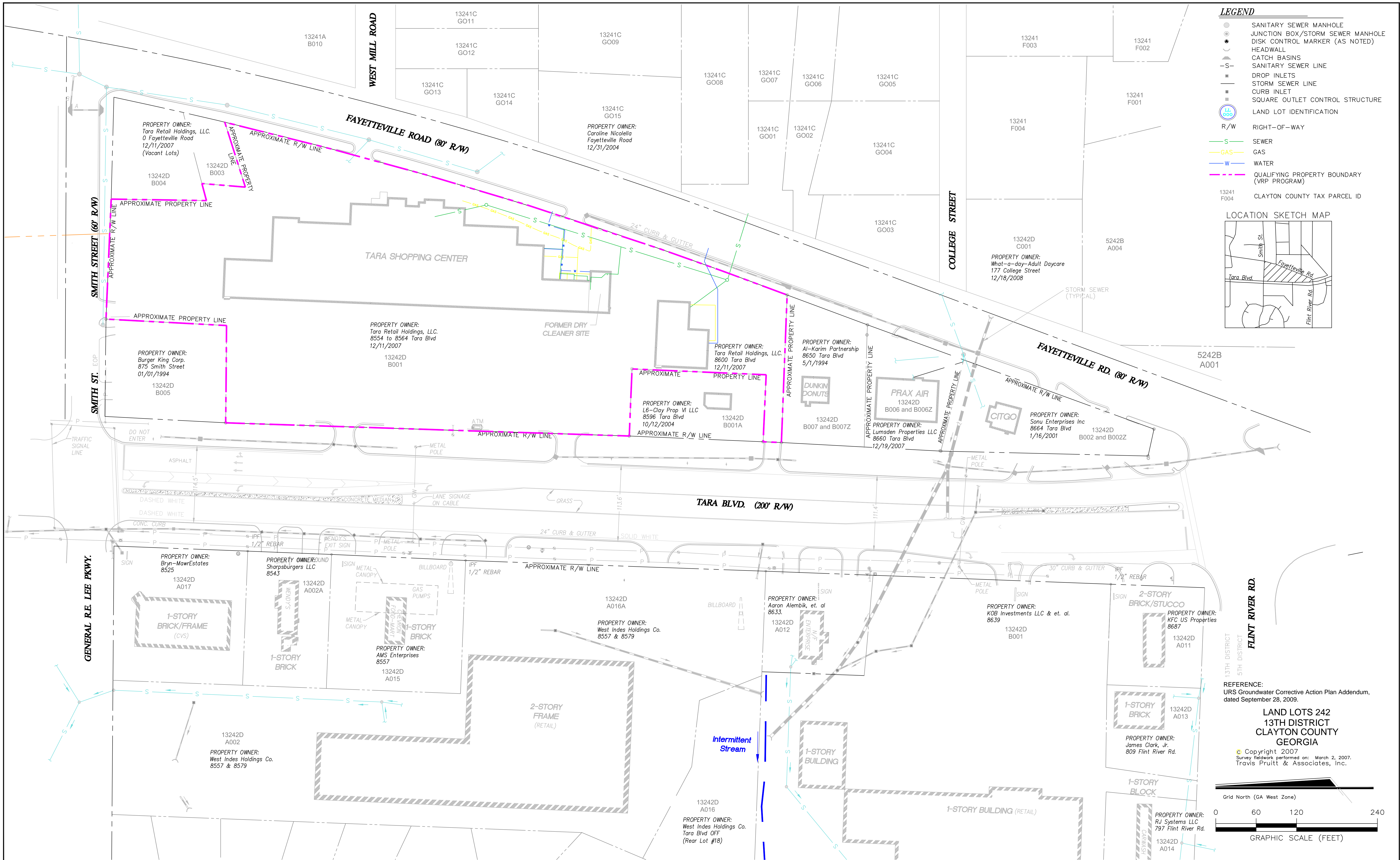
Sample ID	Date Collected	Lab Report Available	Site	Soil	Groundwater	Report
P-45	na	No	Tara Shopping Center	X	-	na
P-46	na	No		X	-	
P-47	na	No		X	-	
P-48	na	No		X	-	
P-49	na	No		X	-	
P-50	na	No		X	-	
P-51	na	No		X	-	
P-52	na	No		X	-	
P-53	na	No		X	-	
P-54	na	No		X	-	
P-55	na	No		X	-	
P-56	na	No		X	-	
P-57	na	No		X	-	
P-58	na	No		X	-	
P-59	na	No		X	-	
P-60	na	No		X	-	
TS-01	Apr-08	Yes		X	-	Xenco, 2008
TS-02	Apr-08	Yes		X	-	
TS-03	Apr-08	Yes		X	-	
TS-04	Apr-08	Yes		X	-	
TS-05	Apr-08	Yes		X	-	
TS-06	Apr-08	Yes		X	-	
TS-07	Apr-08	Yes		X	-	
TS-08	Apr-08	Yes		X	-	

*Terracon*

Sample ID	Date Collected	Lab Report Available	Site	Soil	Groundwater	Report
B-1 / TMW-1	Sep-04	Yes	Al Karim	B-1	TMW-1	Terracon, 2004
B-2 / TMW2	Sep-04	Yes		B-2	TMW-2	

na - not available





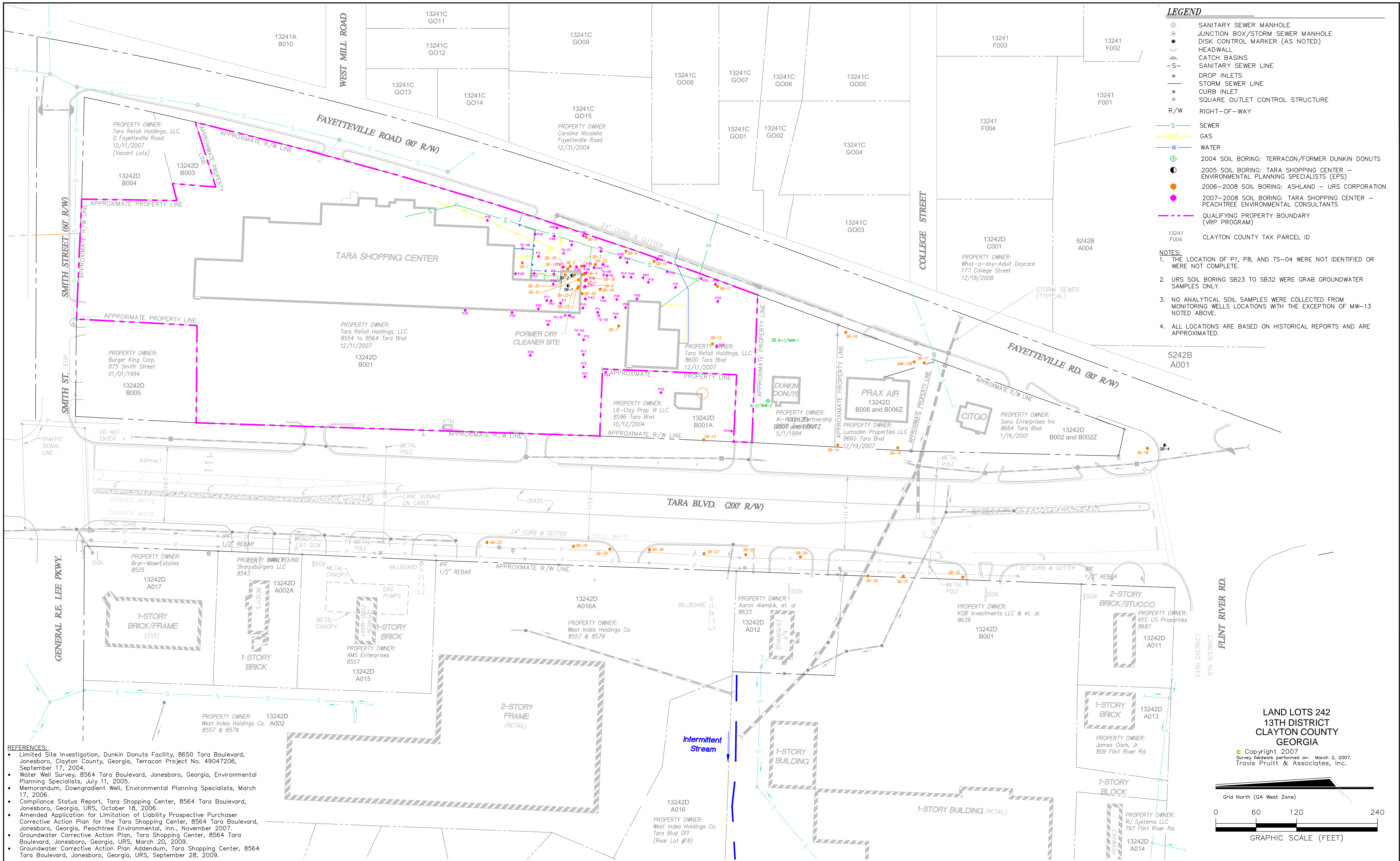
REVISIONS			
Rev.	By:	Disc.: Add properties to the east of Fayetteville Road	Date: 12/2012
Rev.	By:	Disc.:	Date:
Rev.	By:	Disc.:	Date:
Rev.	By:	Disc.:	Date:

TARA HOLDINGS  
8564 TARA BOULEVARD  
JONESBORO, GEORGIA

FIGURE 1  
SITE PLAN, TAX PARCEL INFORMATION AND QUALIFYING PROPERTY BOUNDARY

Drawn By:	MDO	Date Drawn:	12/20/2012
Reviewed By:	MSS	Date Reviewed:	12/2012
Scale:	1" = 120'	Plot Date:	12/2012
Project Number.:	C00342-2013		





LEGEND

- SANITARY SEWER MANHOLE
- JUNCTION BOX/STORM SEWER MANHOLE
- DISK CONTROL MARKER (AS NOTED)
- HEADWALL
- CATCH BASINS
- SANITARY SEWER LINE
- DROP INLETS
- STORM SEWER LINE
- CURB INLET
- SQUARE OUTLET CONTROL STRUCTURE
- R/W RIGHT-OF-WAY
- SEWER
- GAS
- WATER
- 2004 SOIL BORING: TERRACON/FORMER DUNKIN DONUTS
- 2005 SOIL BORING: TARA SHOPPING CENTER - ENVIRONMENTAL PLANNING SPECIALISTS (EPS)
- 2006-2008 SOIL BORING: ASHLAND - URS CORPORATION
- 2007-2008 SOIL BORING: TARA SHOPPING CENTER - PEACHTREE ENVIRONMENTAL CONSULTANTS
- QUALIFYING PROPERTY BOUNDARY (VRP PROGRAM)
- CLAYTON COUNTY TAX PARCEL ID

NOTES:

- THE LOCATION OF P1, P8, AND TS-04 WERE NOT IDENTIFIED OR WERE NOT COMPLETE.
- URS SOIL BORING SB23 TO SB32 WERE GRAB GROUNDWATER SAMPLES ONLY.
- NO ANALYTICAL SOIL SAMPLES WERE COLLECTED FROM MONITORING WELLS LOCATIONS WITH THE EXCEPTION OF MW-13 NOTED ABOVE.
- ALL LOCATIONS ARE BASED ON HISTORICAL REPORTS AND ARE APPROXIMATED.

REFERENCES:

- Limited Site Investigation, Dunkin Donuts Facility, 8650 Tara Boulevard, Jonesboro, Clayton County, Georgia, Terracon Project No. 49047206, September 17, 2004.
- Water Well Survey, 8564 Tara Boulevard, Jonesboro, Georgia, Environmental Planning Specialists, July 11, 2005.
- Memorandum, Downgradient Well, Environmental Planning Specialists, March 17, 2006.
- Compliance Status Report, Tara Shopping Center, 8564 Tara Boulevard, Jonesboro, Georgia, URS, October 18, 2006.
- Amended Application for Limitation of Liability Prospective Purchaser Corrective Action Plan for the Tara Shopping Center, 8564 Tara Boulevard, Jonesboro, Georgia, Peachtree Environmental, Inc., November 2007.
- Groundwater Corrective Action Plan, Tara Shopping Center, 8564 Tara Boulevard, Jonesboro, Georgia, URS, March 20, 2009.
- Groundwater Corrective Action Plan Addendum, Tara Shopping Center, 8564 Tara Boulevard, Jonesboro, Georgia, URS, September 28, 2009.

REVISIONS

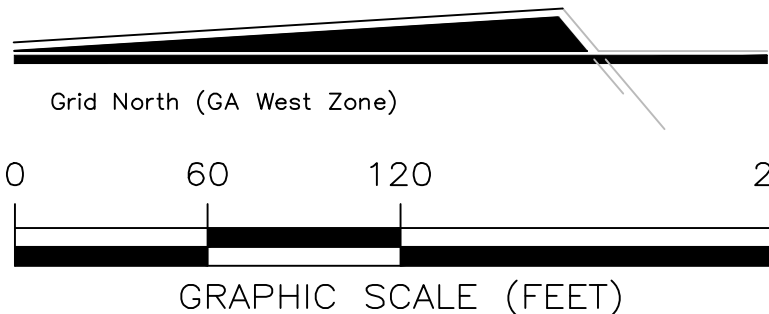
Rev.	By:	Disc.:	Date:
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Rev.	By:	Disc.:	Date:
Rev.	By:	Disc.:	Date:

TARA HOLDINGS  
8564 TARA BOULEVARD  
JONESBORO, GEORGIA

FIGURE 2  
HISTORICAL SOIL BORING LOCATIONS

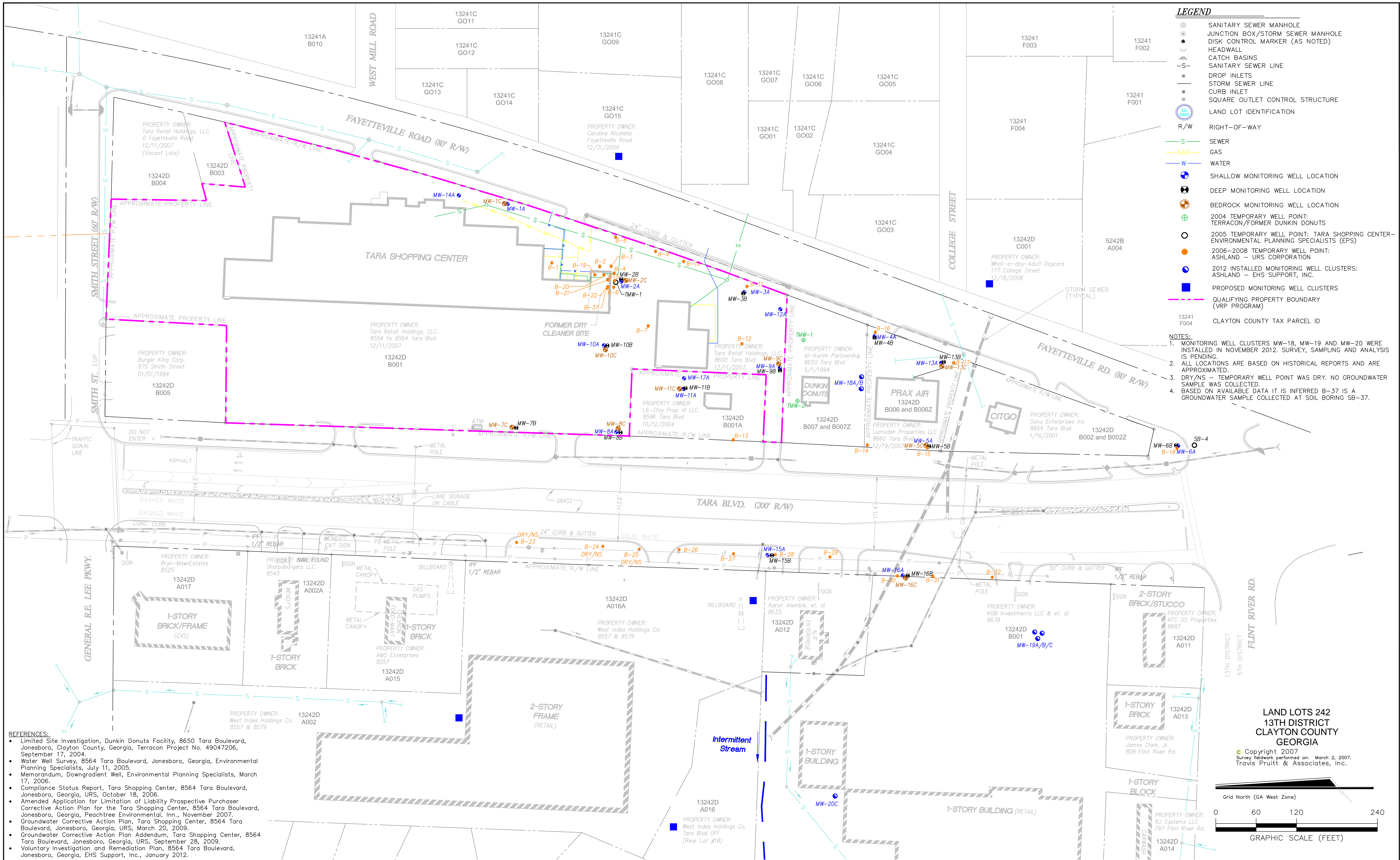
LAND LOTS 242  
13TH DISTRICT  
CLAYTON COUNTY  
GEORGIA

Copyright 2007  
Survey fieldwork performed on: March 2, 2007.  
Travis Pruitt & Associates, Inc.



Drawn By:	MDO	Date Drawn:	12/18/2012
Reviewed By:	MSS	Date Reviewed:	12/2012
Scale:	1" = 120'	Plot Date:	12/2012
Project Number.:	C00342-2013		





- REFERENCES:
- Limited Site Investigation, Dunkin Donuts Facility, 8650 Tara Boulevard, Jonesboro, Clayton County, Georgia, Terracon Project No. 49047206, September 17, 2004.
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  - Groundwater Corrective Action Plan, Tara Shopping Center, 8564 Tara Boulevard, Jonesboro, Georgia, URS, March 20, 2009.
  - Groundwater Corrective Action Plan Addendum, Tara Shopping Center, 8564 Tara Boulevard, Jonesboro, Georgia, URS, September 28, 2009.
  - Voluntary Investigation and Remediation Plan, 8564 Tara Boulevard, Jonesboro, Georgia, EHS Support, Inc., January 2012.

REVISIONS			
Rev.	By:	Disc.:	Date:
1	By:	Disc.:	12/12/2012
2	By:	Disc.:	
3	By:	Disc.:	
4	By:	Disc.:	

TARA HOLDINGS  
8564 TARA BOULEVARD  
JONESBORO, GEORGIA

FIGURE 3  
HISTORICAL GROUNDWATER SAMPLE LOCATIONS

Drawn By:	MDO	Date Drawn:	12/19/2012
Reviewed By:	MSS	Date Reviewed:	12/2012
Scale:	1" = 120'	Plot Date:	12/2012
Project Number:	C00342-2013		

**ATTACHMENT A**  
**In-situ Solidification/Stabilization Case Studies**



## **WRSCOMPASS GEORGIA ISS REFERENCES & EXPERIENCE**

### **Sanford ISS Superfund Remediation**

#### **Orlando, Florida**

**Client/Owner:** Progress Energy

**Contract:** \$14,000,000

**Reference:** Charlie Ross

**Phone:** (919)-546-5236

Soil remedial activities planned for the Sanford site include: the demolition of three abandoned structures, excavation of the first two feet (20,000 cubic yards) of unsaturated soils, DSM of 125,000 cubic yards saturated soils, extensive utility relocations as well as major improvements to Cloud Branch Creek in the form of the installation of nearly 1,000 feet of 7 feet x 7 feet and 11 feet x 7 feet culverts, realignment of the creek as well as 450 feet of open channel improvement of the creek located OU3 North terminating at the confluence of Mill Creek. The DSM operations within the site were conducted using a 4000-series Manitowoc crane equipped with an attached Hain Platform. The crane/platform assembly is supplemented with a swivel-mounted, top-feeding Kelly Bar capable of reaching a depth of 75 feet bgs. Augers were attached to the bottom of the Kelly Bar. A 10-foot auger and a 12-foot auger were utilized on this project.

### **ISS in Commercial Park Setting**

#### **Columbus, Georgia**

**Client/Owner:** Georgia Power Company

**Contract:** \$9,600,000

**Client Contact:** Mr. Brett Mitchell, Previously Mr. Darahyl Dennis

**Client Contact No.** (404) 506-7719

**Regulatory Agency:** GA HSRA

**Regulatory Contact:** David Hays

**Regulatory Contact No.** (404) 656-3851

This project involved site investigation, design preparation, in-situ stabilization of over 80,000 cubic yards of coal-tar-contaminated soils, and placement of an 87,000-square-foot multilayered cap over the disturbed area. Contaminated soils were located primarily in a 15-foot thick zone below the water table under 10 to 20 feet of miscellaneous fill. Excavation and remediation activities were required directly adjacent to the Chattahoochee River, which bordered the site. The downtown urban setting created restrictive space constraints and a high public profile.

WRSScompass worked with Georgia Power to engineer, design, and implement the preferred remedial method that consisted of in-situ stabilization of all impacted soils and the construction of an impermeable cap over the stabilized area.

Upon completion of the in-situ stabilization of the impacted soils, clean on-site fill was utilized to prepare the subgrade prior to the placement of the cap. The cap consisted of a 60-mil HDPE liner with two layers of geotextile and a 2-foot soil cap. Final site restoration consisted of the construction of a new park.



## **ISS & Civil Remediation Services Augusta, Georgia**

**Client/Owner: Confidential Client**

**Contract: \$45,565,601**

**Regulatory Agency: GA HSRA**

**Regulatory Contact: Jim Sliwinski**

**Regulatory Contact No. (404) 656-7802**

WRSScompass successfully completed the remediation and civil work at a former Manufactured Gas Plant (MGP) facility in Augusta, Georgia. The \$45m+ project involved MGP excavation, transportation and disposal, in-situ stabilization (ISS) below the groundwater table, in-situ chemical oxidation (ISCO) at the bedrock interface, stormwater canal dewatering and pump-around. WRSScompass was also responsible for wastewater treatment, civil bridge replacement, restoration of more than 20 acres of residential properties, commercial facilities and public property, installation of sheet pile to reroute a railroad and restoration of a one mile section of the historic Augusta Third Level Canal originally constructed in 1845.

This project was completed with a total of 365,616 hours and 1,759 days without an OSHA Recordable utilizing a peak work force exceeding 150 people. The project was also completed in full compliance with the requirements established by the following regulatory agencies and permits:

- Georgia Environmental Protection Division (EPD), Augusta Environmental Compliance Office, US Army Corps of Engineers Nationwide 38 Permit, NPDES Permit, Lead and Asbestos Abatement Permits, Local Demolition and Construction Permits and, over 50 Private and Public Access Agreements

Our project highlights included 156,014 tons of MGP material that WRSScompass excavated, loaded and hauled off-site for disposal. We also performed In-Situ Soil Stabilization of over 80,000 cubic yards of impacted soils and implemented the sites ISCO program. During construction we treated 30 million gallons of contaminated waste water and imported 112,068 cubic yards of clean backfill. Our civil construction activities associated with the canal, included side wall liner and flood gates installation.

## **ISS Superfund Remediation & Utility Installation Athens, Georgia**

**Client/Owner: Georgia Power Company PRP Group**

**Contract: \$7,500,000**

**Client Contact: Currently Mr. Brett Mitchell, Previously Mr. Darahyl Dennis**

**Client Contact No. (404) 506-7719**

**Regulatory Agency: GA HSRA**

**Regulatory Contact: Kristin Rivera**

**Regulatory Contact No. (404) 657-8663**

The Athens Riverbank MGP site was the location of a former incinerator facility. As a result of previous operations at the site, contamination became concentrated along the riverbanks and in the sediments of the North Oconee River. In order to remediate the site, excavation and off-site disposal of impacted materials were selected.

Initial site control measures including utility relocation, extensive soil and erosion control features, diversion berms and a retention pond, were installed to protect the North Oconee River from receiving runoff due to the steep slope running from the site to the river. To facilitate the removal of river sediments and as part of the runoff control

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features, WRSScompass used a 300-foot portable cofferdam structure, or Porta-Dam. The cofferdam was installed in the river and drained of water prior to sediment removal.



Approximately 70,000 tons of contaminated soils and sediments were removed from the site, with approximately 20% of that material requiring pugmill stabilization to meet Toxicity Characteristic Leaching Procedure (TCLP) lead standards prior to off-site disposal. In addition to the removal activities on the riverbank and in the river, remediation activities also included perimeter air monitoring around the site, preparation of design and corrective action plans, support of the community relations program, installation of 450 lineal feet of 30-inch-diameter water main, and replacement of an existing sanitary sewer line. Restoration of the site included placement of approximately 50,000 tons of clean imported fill for the construction of a scenic river park overlook.

## **ISS and Ex-Situ Remediation – Downtown Setting Macon, Georgia**

**Client/Owner: Confidential Client**

**Contract: \$4,400,000**

**Regulatory Agency: GA HSRA**

**Regulatory Contact: David Hays**

**Regulatory Contact No. (404) 656-3851**

WRSScompass completed remediation of this 5-acre site in downtown Macon, Georgia. The remediation strategy included ex-situ and in-situ treatment, as well as, off-site disposal of approximately 150,000 tons of contaminated soil, concrete, and debris. An on-site water treatment facility was available for collection and treatment of potentially contaminated surface and groundwater throughout the site remediation. The off-site removal/disposal work included demolition, excavation, and off-site transportation of approximately 90,000 tons of coal-tar-contaminated soil, concrete, and debris to a local Subtitle D landfill. Most of these materials were above the existing groundwater table elevation. Several of the structures extended below the water table.

In-situ stabilization was performed with a 12-foot-diameter mixing/injection tool powered by a high-torque drill transmission attached to a 150-ton crawler crane. Approximately 55,000 tons of contaminated soils below the groundwater table were mixed in situ with a cement-based grout and solidified into an impermeable monolith. Contaminated soils and groundwater were treated with 1,108 overlapping, circular columns to an average depth of 10 feet. Samples of the mixed material were tested daily for unconfined compressive strength, permeability, and wet-dry durability.

The in-situ portion of the project eliminated the need for expensive earth-retention systems and addressed all groundwater issues as existing impacted groundwater was locked into the solidified



January 5, 2012

Mr. John Duffey  
WRSScompass  
Vice President  
2305 West Park Place Blvd.  
Suite L  
Stone Mountain, GA 30087

Re: Work Performance on the Sanford, FL Manufactured Gas Plant (MGP) Site  
In-situ Soil Stabilization (ISS) and Surface Water Control Features

John,

I would like to commend the WRSScompass team on its overall performance at the Sanford Manufactured Gas Plant Site in Sanford, Florida. Your experienced team demonstrated its ability to overcome unique challenges and add value in support of our project. Some examples included: designing and building a discrete sampling tool that was able to obtain samples for QC testing from any depth of a completed ISS column; designing and carefully performing deep ISS mixing underneath an AT&T fiber optic trunk line that traversed the site, without causing any damage or disruption to data transmissions; and installing box culverts within ISS-treated soils so that de-watering for culvert installation was unnecessary. These are only a few examples of your team's ability to "think outside the box" to solve various problems that arose during the project.

I especially appreciated and commend your team on its focus to use "green" remediation construction practices. Their focus on sustainability was also recognized by the USEPA, and ultimately resulted in the project winning a Project Merit award from the Environmental Business Journal.

In summary, I would be pleased to recommend WRSScompass to my peers and answer any questions they may have, if they are considering WRSScompass for similar projects.

Charlie Ross

A handwritten signature in black ink that reads 'Charlie Ross'.

Project Coordinator  
Sanford Gasification Plant Site Group

Progress Energy Service Company, LLC  
P.O. Box 1551  
Raleigh, NC 27602

# GREEN REMEDIATION

## Highlights in EPA Region 4



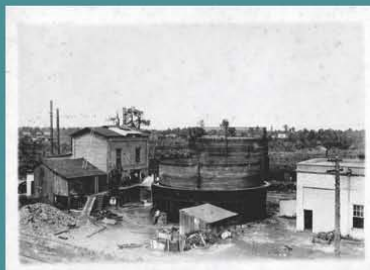
### Sanford Gasification Plant Green Remediation Benefits: Greenhouse Gas Emission Reductions, Waste Reduction and Recycling, and Local Economic Impacts

EPA, contractors and private parties partnered to implement greener best management practices (BMPs) that reduced the environmental carbon footprint resulting from cleanup activities at the Sanford Gasification Plant Superfund site in Sanford, Florida. Specific impacts from these greener BMPs include:

- Avoided 13,700 tons of CO<sub>2</sub> emissions by using granulated blast furnace slag in lieu of cement as part of the contaminated soil stabilization formula.
- Avoided 177 tons of CO<sub>2</sub> emissions by using biodiesel.
- Recycled 3.7 million gallons of water.
- Over 5,000 cubic yards of trees and stumps chipped and sent to local landscaping companies for use as mulch, resulting in 800 tons of recycled material avoided being shipped to landfills.
- Over 1,600 cubic yards of on-site clean soils tested and approved for on-site use.
- Shortened length of cleanup activities by approximately one year.
- \$8 million in local economic impacts resulting from use of local contractors, vendors and supplies.

**SITE BACKGROUND:** The Sanford Gasification Plant (SGP) site is located in a residential/commercial area of Sanford, Florida, approximately 25 miles northeast of Orlando. Historically, the SGP site was a Manufactured Gasification Plant that operated from the 1880s to approximately 1951. Water gas and carbureted water gas were manufactured at the SGP by carbonization or destructive distillation of bituminous coal and coke. At the end of the manufacturing process, gas holder tanks, frequently used to store waste tars and condensates, frequently leaked resulting in contamination.

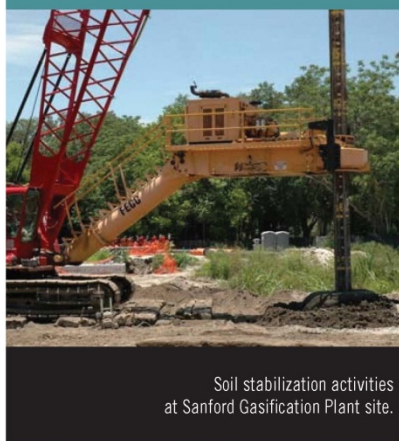
**CONTAMINATION AND REMEDIAL ACTIONS:** Since the early 1990s, several potentially responsible parties (PRPs), referred to as the Sanford PRP Group, have undertaken actions relating to environmental concerns at the site. EPA and the Florida Department of Environmental Protection also conducted site-related environmental investigations to determine potential impacts to soil, ground water, surface water and sediments from operations of the former gasification plant. The Sanford PRP Group initiated cleanup activities under EPA oversight in December 2009 to address contaminated subsurface soils and creek sediments. The project included stabilization of more than 142,000 cubic yards of soil as well as the diversion and restoration of more than 2,300 feet of creek bed. To date, this is the largest completed environmental on-site stabilization project in the United States. Contaminated ground water will be addressed through monitored natural attenuation. The site is not listed on the National Priorities List (NPL), but is considered to be an NPL-caliber site and is being addressed through the Superfund Alternative Approach.



A photo from the Sanford Museum shows the gasification plant in the early 1900s.



# GREEN REMEDATION



Soil stabilization activities at Sanford Gasification Plant site.



Solar-powered backup power sources were used for the perimeter air monitoring system.

**POINT OF CONTACT:**  
Julie Santiago-Ocasio  
U.S. EPA Region 4 Superfund  
Green Remediation Coordinator  
[santiago-ocasio.carmen@epa.gov](mailto:santiago-ocasio.carmen@epa.gov)



## **APPLYING GREENER BMPs:**

The Sanford PRP Group in collaboration with EPA, Natural Resource Technology, Inc. (remedial oversight contractor), and WRScompass (remedial construction contractor), voluntarily adopted and implemented greener BMPs that reduced the environmental carbon foot print resulting from cleanup activities in addition to other benefits.

### ***Minimizing Total Energy Use and Maximizing Use of Renewable Energy***

The primary way the Sanford remedial team minimized total energy use was by using granulated blast furnace slag instead of cement as part of the contaminated soil stabilization formula; this resulted in 13,700 tons of avoided CO<sub>2</sub> emissions. The Sanford remedial team also used a gravity drain system along the creek instead of relying on large diesel pumps to divert over 500 linear feet of stream during remediation of contaminated sediments. In addition, the team used solar-powered backups for the perimeter air monitoring system.

### ***Minimizing Air Pollutants and GHG Emissions and Maximizing Use of Machinery Equipped with Advanced Emission Controls***

Actions taken to reduce impacts to air quality and greenhouse gas emissions, in addition to those discussed above, included: use of B20 (a biodiesel/petroleum diesel blend) and ultra-low sulfur diesel; use of more fuel efficient tier-2 and tier-3 equipment; use of anti-idling for heavy equipment; and use of biodegradable foam suppressants to reduce air pollutants.

### ***Minimizing Water Use and Impacts to Water Resources***

The Sanford remedial team sought to reduce water use where possible, including collecting and reusing site water. In total, 3.7 million gallons of water were recycled.

### ***Beneficial Reuse of Materials/Reduction of Materials and Waste Reduction***

Actions taken related to the beneficial reuse of materials/waste reduction efforts included: use of recycled concrete for creek bed material to limit erosion (i.e., riprap); chipping and mulching of approximately 5,000 cubic yards of trees and stumps removed for heavy equipment operation subsequently sent to local landscaping companies; reuse of on-site soils determined to be clean for on-site use; and concrete recycling.

### ***Use of Local Labor and Supplies***

The Sanford remedial team used local labor, vendors and supplies where possible. Both the remedial engineer and remedial contractor hired local personnel to fill various positions needed in areas of technical, administrative, skilled labor and general labor positions. Approximately 75 percent of the purchases were made from local vendors, resulting in approximately \$8 million in local economic impacts. In addition, the city performed on-site recycling where appropriate.

## **LESSONS:**

This project demonstrates that through team work, coordination, and careful consideration to the environmental impacts resulting from all aspects of cleanup, opportunities for significant environmental improvements can be identified and implemented, even for large-scale remedial projects. In addition, it demonstrates that PRPs are willing to adopt greener BMPs because they are not only good for the environment, but in most instances they result in time and cost savings.

#### **About the Calculations**

Calculations of environmental and economic impacts as well as cost savings were prepared by WRScompass. CO<sub>2</sub> emission reductions are based on U.S. Energy Information Administration emission factors.

[www.epa.gov/superfund/greenremediation](http://www.epa.gov/superfund/greenremediation)

# GREEN REMEDIATION:

## Advancing Environmental Performance

Through EPA's Green Power Partnership and the RE-Powering America's Land Initiative, EPA Region 4 Superfund is working with public and private-sector partners to encourage renewable energy development opportunities on current and formerly contaminated lands. In applying EPA's Green Remediation Strategy, EPA Region 4 Superfund has also drafted and implemented the new Clean and Green Policy to enhance the environmental benefits of federal cleanup programs by promoting technologies and practices that are sustainable.

### SANFORD

In collaboration with EPA, the remedial oversight contractor, and the remedial construction contractor, the PRP group at the Sanford Gasification Plant in Sanford, Florida voluntarily adopted and implemented greener cleanup standards that reduced the environmental carbon footprint resulting from cleanup activities in addition to other benefits.

Specific impacts from these greener cleanup best management practices include:

- Avoided 13,700 tons of CO<sub>2</sub> emissions by using granulated blast furnace slag in lieu of cement as part of the contaminated soil stabilization formula.
- Avoided 177 tons of CO<sub>2</sub> emissions by using biodiesel.
- Recycled 3.7 million gallons of water.
- Over 5,000 cubic yards of trees and stumps chipped and sent to local landscaping companies for use as mulch, resulting in 800 tons of recycled material avoided being shipped to landfills.
- Over 1,600 cubic yards of on-site clean soils tested and approved for on-site use.
- Shortened length of cleanup activities by approximately one year.
- \$8 million in local economic impacts resulting from use of local contractors, vendors and supplies.

Since the early 1990s, the Sanford PRP group undertook actions relating to environmental



concerns at the site. The Group initiated cleanup activities under EPA oversight in December 2009 to address contaminated subsurface soils and creek sediments that were completed in 2011. The project included stabilization of more than 142,000 cubic yards of soil as well as the diversion and restoration of more than 2,300 feet of creek bed. To date, this is the largest completed on-site stabilization project in the United States. Contaminated ground water will be addressed through monitored natural attenuation.

### Working Toward a Greener Future

Region 4 Superfund's new Clean and Green Policy aims to enhance the environmental benefits of federal cleanup programs. This Policy does not fundamentally change how and why cleanup decisions are made, but calls for more sustainable methods of implementing cleanups. Project managers are encouraged to apply lifecycle analysis tools that help account for the manufacture, use, and transport of materials, products, equipment and generated wastes associated with all phases of the cleanup.



## WRSCOMPASS EXPERIENCE ISS SNAPSHOT

WRSCOMPASS' PROJECT HISTORY									
Project Name and Location	Contract Value	RCRA/CERCLA Voluntary Programs	Soil Removal	Permit Requirements	Contaminants (i.e. PCB, Heavy Metals, Coal Tar, Hydrocarbons)	In-Situ/Ex-Situ Treatment	Solidification/Stabilization	Waste Management	Erosion Controls
Americus Site Georgia Power Corp.	\$1,000,000	✓	✓	✓	✓	✓		✓	✓
Appleton MGP Site – WE Energies	\$2,700,000	✓	✓	✓	✓	✓	✓	✓	✓
Athens Riverbank Georgia Power Corp.	\$7,700,000	✓	✓	✓	✓	✓	✓	✓	✓
Athens Uplands Georgia Power Corp.	\$5,500,000	✓	✓	✓	✓	✓		✓	✓
Augusta 15th Retec	\$2,700,000	✓	✓	✓	✓	✓	✓	✓	✓
Augusta 9th Retec	\$1,100,000	✓	✓	✓	✓			✓	✓
Augusta MGP, Northern Parcel	\$9,000,000	✓	✓	✓	✓	✓	✓	✓	✓
Augusta MGP Site (off-sites) Mactec	\$8,200,000	✓	✓	✓	✓	✓	✓	✓	✓
Bibb City – Georgia Power Corp.	\$500,000	✓	✓	✓		✓	✓	✓	
Brooklyn Commons, BNG Site	\$5,400,000	✓	✓	✓	✓			✓	✓
Brightwaters Site	\$800,000	✓	✓	✓	✓		✓	✓	✓
Columbus FCRC/Brooklyn Natural Gas	\$6,000,000	✓	✓	✓	✓	✓	✓	✓	✓
Green Bay MGP Site Wisconsin Public Service Corporation	\$720,000	✓	✓	✓	✓	✓		✓	✓
Harbor Point Niagara Mohawk Power Corp.	\$3,800,000		✓		✓	✓	✓		
Macon MGP Site Retec	\$4,400,000	✓	✓	✓	✓	✓	✓	✓	✓
Network Underground Site Georgia Power Corp.	\$16,300,000	✓	✓	✓	✓	✓	✓	✓	✓
Saratoga Springs MGP Niagara Mohawk Power Corp.	\$16,300,000	✓	✓	✓	✓	✓		✓	✓
Savannah MGP Site	\$5,000,000	✓	✓	✓	✓	✓	✓	✓	✓
Sumter MGP Site – SCANA	\$600,000	✓	✓	✓	✓	✓	✓	✓	✓
Waycross Canal Georgia Power Corp.	\$15,000,000	✓	✓	✓	✓	✓	✓	✓	✓
Waycross MGP Site Retec	\$1,500,000	✓	✓	✓	✓	✓	✓	✓	✓

**ATTACHMENT B**  
Professional Services

**ATTACHMENT B****Tabulated Summary of Professional Engineer and Geologist Time (Period July 1 2012 through November 30, 2012)****Tara Shopping Center, Jonesboro, GA****Voluntary Remediation Program (HSI 10798)**

<b>Professional Engineer</b>	<b>Date</b>	<b>Hours</b>	<b>Description</b>
Kristin VanLandingham, PE	7/10/2012	2	Review VIRP acceptance and comment letter. Discuss action items with project team.
	7/12/2012	1	Conference call with Ashland to discuss draft revised cost estimate from remediation contractor (WRSCompass).
	8/21/2012	2	Discussions with remediation contractor to review remediation data quality objectives.
	8/22/2012	1	
	9/5/2012	2	Perform due diligence for Uniform Environmental Covenant and Qualified Property requirements
	10/15/2012	1.5	Internal call to discuss remediation scope of work assumptions including volume estimates, resources and scheduling.
	10/16/2012	1	Conference call with remediation contractor to review out of scope items following initial bid estimate.
	10/18/2012	1	Review financial planning cost estimates associated with proposed remediation activities.
	10/26/2012	1	Participate in project call to discuss geotechnical scope of work requested by remediation contractor.
	10/29/2012	12	Site visit with remediation contractor and property owner to assess building demolition and remediation lay down area.
<b>Professional Geologist</b>	<b>Date</b>	<b>Hours</b>	<b>Description</b>
Rick Henterly, PG	7/2/2012	1	Review scope of work for off-site well installation. Participate in team meeting to discuss geological conditions, preliminary groundwater site conceptual model, and best drilling practices for implementation of overburden and bedrock well drilling,
	7/3/2012	1	
	7/11/2012	2.5	
Greg White, PG	7/11/2012	2	
	7/13/2012	1.5	
	7/16/2012	1	
	11/19/2012	1	Participate in project kick-off and safety meeting related to well installation activities.
	11/28/2012	12	Provide mentorship and oversight with field geologist for well installation activities using Sonic Drilling.
	11/29/2012	10	